1885MNRAS..45..316S

Astronomische Gesellschaft, and the last in which the *Nautical Almanac* uses the Seven-Year Catalogues—Dr. Auwers has taken the most favourable case for the *Berliner Jahrbuch* and the most unfavourable for the *Nautical Almanac.* The comparison would have been more impartial and more useful if 1884 had been the year selected.

Notes and Corrections to Sir John Herschel's Synopsis of all Sir William Herschel's Measures. By Herbert Sadler.

The following notes and corrections to Sir John Herschel's "Synopsis of all Sir William Herschel's Micrometrical Measurements, &c," published in volume xxxv. of the *Memoirs*, may be considered as supplementary to those already published by Sir John Herschel in *Monthly Notices*, vol. xxviii. p. 151, and by Mr. Burnham in vol. xxxiii. p. 567, and vol. xxxiv. p. 98. These, or other notes by Mr. Burnham in the *Monthly Notices* or *Memoirs*, have not been referred to in the present paper, except in one or two cases where obvious misprints in them have been corrected. The original MSS. of Sir William and Miss Caroline Herschel have been most carefully compared with the printed catalogues in the *Philosophical Transactions*, and both of these authorities with the Synopsis itself; and in this revision many errors which had escaped previous notice have been discovered and corrected. The general tenor of these corrections is to show, even more strikingly than before, the marvellous accordance of Sir William Herschel's measures (made with a 6⅓-inch mirror roughly mounted in the open air, and with rude micrometrical appliances) with the best results of modern instruments, furnished with excellent micrometers, and driven by clockwork.

Many of the identifications have been made with the aid of the 3¼-inch Sheepshanks instrument belonging to the Society, and have in all cases been indicated as concisely as possible.

All the stars in the first three classes, with one exception (that of III. 31), have now been identified. Of those which still remain unidentified, three have been measured in position-angle, five in distance, and four only in both coordinates. The position-angles or distances of only a few of the remainder have even been estimated.

Class I.

No.

1. Column 5: *for* 1779·687 *read* 1779·816, *for* 1802·019 *read* 1802·074. Column 6: *for* 297° *read* 297° est. Columns 9 and 10: *add* 1779·747, 1″·667; 1780·309, 4″·062— : 1780·320, 2″·968.

3. Column 12: *add* Wʳ. 243.

4. Column 12: "Called by H. 16 *Draconis.*" $\underset{\circ}{\text{H}}$, however, calls the star 17, *not* 16, *Draconis* in the observation of 1802·827.

7. Column 6: *for* 26°·63 *read* 26°·09.

1885MNRAS..45..316S

No.

13. Column 5: *for* 1782·816 *read* 1782·762. Column 12: The star is not S. 770, as printed, or 790, as corrected by Sir John Herschel, but 720.

15. Column 6: The angle 1802·246 is given as 27° 1′ *sp* (242°·98), and with this the diagram agrees, but under date March 12, 1803, ♅ corrects to *nf* (62°·98). The components are probably alternately variable. There is little doubt that 242°·98 is the correct angle.

16. Column 12: The angle is given *nf* in printed catalogue, "Account of the Changes &c."; *np* in second account.

20. Column 6: *for* 200°·95 *read* 200°·05.

21. Column 12: *for* P. ii. 93 *read* P. ii. 89.

23. Column 12: AC. *add* "from a preceding star."

27. Column 6: *for* 234°·20 *read* 234°·80.

28. Column 6: AC. *For* 300°·0 *read* 301°·0. Column 9: *for* 1782·91 *read* 1782·991. The second measure of AC was made with the 20-ft. reflector of 18¾-in. aperture.

30. Column 3: *for* ν^2 *Cancri read* σ^2 *Cancri.*

31. Column 12: *dele* Sir J. Herschel's note. Struve gives 39°·40, 1828·59.

33. The angle is given *sf* in the MSS., corrected by Sir John Herschel in MS. note to *nf*. It is 51 *Scorpii*, not *Libræ*.

36. The angle by diagram, date 1782·550, is 20° 42′ *np* not *nf*, but this seems impossible. It is given *nf* in "Account of the Changes." In MSS. ♅ says, "with 460 ½ diam. of S[maller] asunder; bluish white, ash coloured." The angle under date 1803·285 is 26° 49′ *np* or *sf*.

38. Column 12: The angle is given 8° 24′ in "Continuation of an Account, &c."

41. Column 6: *for* 350°·00 *read* 350° est. The place is in error, it should be $17^{h}\ 42^{m}\ 17^{s} + 72^{\circ}\ 59'\ 10''$.

42. Another measure of date 1782·671, "by the old micrometer" 216°·00. "I suspect a mistake in reading off one of the measures."

46. "Too far asunder for one of the first class."

47. This pair is O. Arg. S. 21208.

48. Column 6: *for* 259°·85 *read* 255°·85. This pair is AC 19.

49. Probably Σ 2880, the place given being 1° in error.

50. Column 6: *for* 311°·20 *read* 311°·20–. I cannot find the measure 312°·77 given under date 1801·704. The MSS. and H. & S. give 312°·43, 1802·665.

54. Column 5: 1802·731, given as 1802·068 in "Continuation of an Account."

60. Cf. a note by Mr. G. Hunt in the "Observatory" for August 1881.

62. Cf. "English Mechanic," February 18 and April 1, 1881, and *Monthly Notices*, xxxvii. p. 280.

67. Column 5: *dele* ·988. Column 6: *dele nf.*

68. Column 12: *add* P. iv. 258.

69. The angle is given as 167°·40 in the MSS. and 167°·00 in the printed Catalogue.

1885MNRAS..45..316S

No.

70. Column 12: *add* S. 487.

71. Column 5: *for* 1782·882 *read* 1783·060. Column 12: *dele* Σ 1422. "In Σ hæc stella [1422] = H. I. 71 est posita, auctoritate catalogi mei minoris. Sed hic est error; nam H. I. 71 = Σ 1428 sine dubio." *Pos. Med.* p. C.

72. Column 9: *for* 1782·824 *read* 1782·884.

74. Column 12: *add* 160 P. II. *Trianguli.*

75. Column 12: *dele* Σ 702? and note. It is Σ 700, and is said to be ¼° *sp* 26 *Orionis* (cf. Wollaston's "Specimen of a General Catalogue").

80. Column 5: *for* 1782·101 *read* 1783·101. Column 6: *for* 132°·83 *read* 47°·17. Column 12: *for* 42·83 *read* 47·17.

81. Column 6: *for* 210°·13 *read* 210°·91.

83. Column 5: *for* 1783·350 *read* 1783·183. ♅ says of the measure of this date, "Note the measure was forgot to be wrote down, but it being the last taken, I find my micrometer stands at . . . 14° 30′ [*nf*], which agrees well enough with the figure, but as the instrument has been touched a good deal it may have been altered."

86. The measure of 1802·742 must refer to some other star. In the MSS. it is said to be "105 *Herculis* borealior;" and yet "it is a star about 1¾ deg. from the two stars of 107 *Herculis*; the largest of several.' Cf. H. and S. p. 298; Σ *Cat. Novus*, p. 85; *Mens. Micr.* p. 78.

87. Column 6: *for* 264°·28 *read* 264°·73.

90. Certainly Σ 2781. Cf. "English Mechanic," Aug. 13, 1880.

94. Column 12: *add* "1803 May 28. Near ½ diameter of Smaller. The diameters are full 2 to 1·7 feet."

CLASS II.

5. Column 12: the angle given 56° 5′ in "Continuation of an Account."

6. Column 12: the angle given 83° 28′ in "Continuation of an Account."

7. Column 5: *for* 1782·378 *read* 1782·463.

8. Column 6: *for* 1781·271 *read* 1781·690.

9. Column 12: *for* Quadruple *read* Treble.

11. Column 5: *for* 1780·161 *read* 1781·882.

12. Column 3: *for* Oct. 17 *read* Oct. 19. Column 10: *for* 5″·00 *read* 5″; and *add* in Columns 9, 10, and 11: 1779·797; 4″·375; 2.

13. Column 10: Sir J. Herschel gives 4″·02? as the measure under date 1780·537; it should be 4″·38.

16. Column 10: *for* 5″·00 *read* 5″.

17. Column 6: *for* 116°·82 *read* 117°·55. Column 7, same line: *for* 1 *read* 2.

22. Column 5: *for* 1781·728 *read* 1782·449.

31. Column 9: *add* 1782·673. Column 10: *add* 10″ or 12″.

32. This is also V 51 (and N 84, as Burnham points out). It is Σ C.G. 2332.

1885MNRAS..45..316S

No.

43. Column 8: *add* AC. Column 9: *add* 1782·129. Column 10; *add* 5″ ±. Column 11: *add* est.

51. The angle in 1802 is given as 86° 55′ *sp*, but should evidently be *sf*. There is no diagram given.

52. Column 6: *for* 278°·24 *read* 278°·40.

56. Column 12: it *is* Σ 175. Rectilinear motion.

60. This is Lal. 12755. h 3876.

61. Column 12: *for* Hardy's read Harding's. Σ identifies this pair with his 788.

62. Column 5: *for* 1804·665 *read* 1802·665.

68. Column 6: *for* 261°·60 *read* 81°·60. Column 4: *for* AC *read* $C - \frac{A+B}{2}$. Column 12: *add* AB from ρ *Lyræ* 152°·2, 137″5, 1783·200.

70. Column 3: *for Sagittarii read Sagittæ*. The star is P. xx. 2. *Aquilæ*; wrongly placed in *Sagitta*.

74. Column 12: *dele* note. ♅'s estimates refer to AC, not BC.

87. Cf. "English Mechanic," Aug. 13, 1880, May 13, 1881. It is probably h 2435.

101. This pair is said to be "1° from the star ad 49 am *Camelopardali*," *i.e.* 49 *Cam.* itself, ♅ V. 135. The place given is therefore largely in error. This pair is Σ 1127.

CLASS III.

1. Column 10: *for* 15″21 *read* 14″·27; *for* 20″·41 *read* 20″·52. Column 9: *for* 1780·521 *read* 1780·134.

2. Column 10: *for* 15″·50 *read* 15″·08.

5. Column 10: *for* 8″·08 *read* 9″·04. Column 11: *for* 1 :: *read* 3.

6. Column 5; *for* 1781·882 *read* 1781·966.

7. Columns 9, 10, and 11: *add* 1783·030; 13″·12; 1.

11. Column 9: *for* 1797·753 *read* 1779·753.

14. Column 9: *for* 1780·61 *read* 1780·16.

15. Column 3: *for* 1776 *read* 1779. Column 10: *for* 6″·87 *read* 7″·5. Columns 9, 10, and 11: *add* 1780·521; 6″·87; 1.

18. Column 6: 120°·33 in printed Catalogue, 120°·45 in MSS. Distance 8″·75, under date 1780·216; ♅ says of this measure, "Occulted by the Moon. As fast as I could, lest I should be too late." Distance 6″·25, under date 1780·263. "Very carefully taken, both diameters included, but too large a measure."

19. Column 6: 182°·73, corrected by Sir John Herschel to 181°·44. Correct measure is 181°·73. Column 9: *for* 1781·731 *read* 1781·312.

23. Column 3: *for* "34 *Cassiop.* φ" *read* "near 34 *Cassiop.* φ.' Column 6: *for* 271°·85 *read* 268°·15. This pair is in the cluster VII. 42.

24. The distance of AC is given in the printed Catalogue as 67″·82. In the MSS. 57″·82 is substituted for 67″·82 erased. The latter is undoubtedly right.

26. Column 6: *for* 262°·35 *read* 262°·65.

1885MNRAS..45..316S

No.

27. This is *k′ Puppis.*

32. Column 6: *for* 238°·60 *read* 238°·42.

33. Column 10: *for* 11″·35 *read* 11″·58.

35. Column 10: *for* 15″·93 *read* 16″·93.

40. Column 6: MSS. give 137°·32 *for* 133°·62. This pair is certainly Σ 2232.

42. Σ *Cat. Novus,* p. 79. "Fortasse hæc (246) = ♅ III. 42." ♅'s diagram converts this suspicion into certainty.

43. This is Σ 914.

46. This is Σ 952.

50. Column 10: 7″·13, *add* "central measure."

55. This is also V. 37. AB of this is BD of *v Coronæ.*

69. The date of the second measure of position-angle is given 1802·789 in "Continuation of an Account," not 1784·789.

71. Column 6: *for* 125°·24 *read* 125°·40.

72. So. and Σ quote ♅'s angle as 58°·42. The only measure given by ♅ is the one given in the text.

73. Column 6: *for* 180°·60 *read* 180°·80.

76. Column 12: *dele* S 494?

78. This is Σ 414.

80. Column 6: *for* 292°·37 read 292°·40. The R.A. of this star is 1^{m} too small.

83. Column 6: *for* 223°·10 *read* 316°·90; confirmed by diagram.

84. Called 40 *Lyncis* in MSS. and printed Catalogue. Σ 1342, with which Sir J. Herschel and Struve identify it, is a pair near 40 *Lyncis,* for which Σ gives 326°·9; 17″·89; mags. 8·6, 11·0. 39 *Lyncis* has nearly the same R.A., but is 15° north of this. ♅'s measures agree admirably with those of Σ for 39 *Lyncis*; but it cannot be this.

90. Column 10: *for* 13″·60 *read* 13″·10.

91. Column 10: "central measure, not very accurate." This is Σ 379.

94. Σ 688.

96. Column 12: *add* "A third extremely faint star in the same line preceding at three or four times the distance of the other two."

105. Column 12: Σ identifies this with his 2595 in the *Cat. Novus.* Measured at the Washburn Observatory by Burnham.

113. Σ 2630.

114. Σ 953.

CLASS IV.

2. Struve says (*Cat. Novus,* p. 86), "Suspicor in angulo latere errorem aliquem, quale exemplum jam obtulit *α Cassiopeiæ.*" Struve's angle is 84°·96. It is very possibly V 42 = Sh 289, 31° 51′ *sp* in ♅ being mistaken for *nf,* and the distance only belonging to *η.*

9. Column 3: *for* 47 *read* 74. Column 12: *add* "an obscure star within about 1½ min."

1885MNRAS..45..316S

No.

12. "Σ 2993. Hæc stella est in vicino ψ' *Aquarii*, quam Herschelius IV. 12 nuncupat. At ψ' *Aquarii* est duplex classis quintæ, cujus distantia est 50″, cum pro IV. 12 Herschelius dederit distantiam 23″·1. At nostræ stellæ distantia est 26″ secundum cl. Southium. Hinc licet suspicari eam esse H. IV. 12." (*Cat. Novus*, p. 87.)

22. *For* f^1 *read* f^2 *Cygni*. Σ, *Cat. Novus*, p. 87.

24. Column 12: *add* Treble.

26. VIth Class, 1782, October 19.

28. This is the same as IV. 46, 20 *Geminorum*, Σ 924. Wrongly identified in *Memoirs* R.A.S. vol. xl., with O Σ 143.

30. Σ 1369.

31. Probably O Σ 473.

32. Column 6: *for* 90°·00 *read* 90°.

35. Column 10: *for* 25″·90 *read* 25″·90 +.

36. Column 6: *for* 273° 274° *read* 266° 267°.

37. Columns 9, 10, and 11: *add* 1781·805; 19″·53; 1.

39. This is O Σ 434, h 614.

59. Column 6 · *for* 200°·60 *read* 210°·80. Column 12: *dele* Sh. 272?

65. Column 6: *for* 258°·60 *read* 228°·80. It is Σ 3022.

73. Column 12: Σ shows the identity of his 586 and 587 in both the *Mens. Micr.* and *Pos. Med.*

74. Column 6: *for* 65°...70° *read* 70°...75°.

77. Column 6: *for* 333°·60 *read* 333°·40.

84. Another measure (which ♅ thinks belongs to another star) 32″.80 "central measure, a little inaccurate," 1782·988. This measure is the better of the two.

85. Column 6: *for* 350° *read* 10°. Column 11, last line, *for* 1 *read* 2.

93. Σ 2431.

95. Possibly Σ 1084.

98. Σ 817.

101. Column 9: *for* 1783·312 *read* 1783·257.

102. Column 5, *for* 1783·895 *read* 1783·224. Column 6: *for* 320°·05 *read* 219°·95. Column 9: *for* 1783·846 *read* 1782·846; *for* 1783·895 *read* 1783·224.

104. Column 10: *for* 15″·95 *read* 18″·95.

105. Column 5: *for* 1785·997 *read* 1802·235.

109. Column 5: *for* 1783· *read* 1783·739.

115. Column 6: *for* 41°·20 *read* 46°·20.

118. Unidentifiable.

121. Column 6: *for* 270°·50 *read* 270° or 271°.

123. Column 5: *for* 1783·293 *read* 1783·627.

125. Column 12: *add* h 2278.

1885MNRAS..45..316S

No.

126. Column 5: *for* 1783·288 *read* 1783·621.

132. Column 6: *for* 311°·60 *read* 312°·40.

Class V.

3. Column 10: *for* 30″...45″ *read* 30″...35″.

6. Column 12: *for* 69° 23′ *read* 69° 28′; *for* (=339·38) *read* (=339·47).

8. Column 12: The position, however, in the MSS. is given as 97° 37′ or 82° 23′ *nf*, and 79° 37′.

9. Column 10: *for* 35″·42 *read* 33″·42. Column 12: *add* Σ 3124.

22. Column 8: *dele* AB, AC. "Has four or five near, two of which are about 20″ or 30″ from each other."

27. Burnham (Washburn Observations, I. p. 133) identifies this with Sh. 202, the place in Hh being in error. Column 9: *for* 1781·359 *read* 1782·359.

29. Column 10: *for* 25″...30″ *read* 30″...35″. Column 12: *for* Σ C.P. 452 *read* Σ C.P. 542.

32. Column 6: *for* 280° 62 *read* 259°·38. Column 10: *for* 55″·70 *read* 55″·70+.

40. Column 6: *for* 350° ± *read* *np*.

50. Column 4: *for* AB *read* BC. Column 8: *for* AB *read* BC. Column 12: *for* AC *read* AB.

51. The same as II. 32.

57. Column 9: *for* AC *read* AB. This is the same as V. 113. It is 26 (Bode) *Orionis*; P IV. 257.

62. This is not 57 *Leonis*, but S. 617.

63. This *is* Bode 91.

64. Column 9: *for* 1785·096 *read* 1783·096.

65. Column 12: *add* Quadruple.

67. This cannot be So. 560, the distance of which, according to So., is 90″·6.
Sir John Herschel queries the identity in So.'s Catalogue.

70. Column 6: *for* 277°·00 *read* 263°·00. Column 12: *add* OΣ 268, h 2657.

72. Column 12: *add* Σ 2074.

76. Columns 9, 10 and 11. *Add* 1783·600; 33″·27; 1::.

77. Column 3, *for* 214 *read* 215. Cf. Sir J. Herschel in *Memoirs* R.A.S., xl. p. 141.

79. Column 12: *for* Camelop. *read* Cassiop. It *is* 9 *Cassiopeiæ.*

81. Column 12: *for* Σ C.P. 37 *read* 36.

84. This is Σ C.P. 52; OΣΣ 22. S 405. Not 47 *Cass.*

85. This is certainly Σ C.P. 6. The star is Lalande 335.

88. Probably the same as V. 22, *q. v.*; it is described as being near λ *Auriga*, 3′ or 4′ *nf* it. Cf. So. 472 A–C.

90. Column 6: *for* 331°·80 *read* 208°·20.

1885MNRAS..45..316S

No.

96. This is almost certainly the same as h 3122; the R. A. being 1^m 20^s too large, and the N.P.D. 1° 14′ too great in H h; h 3122 is W. M. T. Z. 147, No. 1.

99. Column 6: *for* 0°·60 *read* 0°·80.

102. Column 11, line 1: *for* 1 *read* est. "Too low to call it a measure."

104. Column 12: *add* "40′ *sp* ε *Sagittæ*."

108. Column 12: *add* Δ 36.

109. Column 12: *add* h 785.

110. Column 5; *for* 1783·320 *read* 1783·740.

112. Column 12: *add*—This is Σ cat. generalis 746 = Σ C.P. 233, 6^h 26^m 53^s·8 *νπδ* 67° 47′ 7″ (1880).

113. = V. 57; = *Orionis* 26 (Bode); = 257 P. iv. *Tauri*; = Σ C.P. 144; = Sh. 49.

115. Column 12: *to* "central measure" *add* "inaccurate." It is h 365.

116. = VI. 5 with a closer *comes*.

122. Column 6: *for* 157°·6 *read* 157°·1.

124. This is *Lacaille* 4726. Howe has found the principal star to be a close pair. H's distance marked "very inaccurate."

128. Column 10: *for* 41″·80 *read* 41″·96.

131. Column 12: *add* P. xv. 14.

135. This is Σ 1122. Column 9: *add* 1783·268. Column 10: *add* 14″·78. Column 11: *add* 1. Column 12: *add* "perhaps a little inaccurate," To the measures of 1783·734 the following note is appended. "The observation page 371 [1783·268] and this observation do not agree; nor can I surmise what could occasion the mistake of 371." The observation of page 371 is, however, the correct one, that of 1783·734 being in error in distance; Σ gives 4°·87 : 15″·460 : 1830·59, agreeing excellently with H's 185°·00 : 14″·78: the stars being of equal magnitudes, 7^m·1, according to Σ.

137. Column 9: *for* 1783·803 *read* 1783·808.

Class VI.

1. Column 6: on one side of the page in the MSS. the angle is given as 92°·53, on the other side as 92°·20. Sh. give 92°·20. Column 10: the distance 107″·83 is the mean of two, 105″·16 and 110″·468, the latter being marked "better"; the distance 111″·72 is the mean of two, 112″·812 and 110″·625, the latter being marked "too small"; *for* 110″·00 *read* 110″. To the observation of 1780·687 H appends the following note: "Colour of a dark red ink, but darker than I can recollect to have seen any star."

2. Sh. give H's distance 1781·641 as 50″ 6‴, but it is clearly written 50″ 18‴ [50″·30] in the MSS., and with this the printed Catalogue agrees.

4. Column 3: *dele* 5 and 6 *Capric.* α. This is not α *Capricorni*, but a faint and unequal pair preceding α^1 and α^2.

5. Column 12: *add* this is AC of V. 116.

6. Column 12: *add* this is h 3040.

8. Column 12: *add* Σ 9, App. I.

1885MNRAS..45..316S

No.

10. Column 6: *add sf* 1781·800, and with this the whole subsequent history of the star agrees. The angle in 1781·827 should evidently be 176°·23.

11. Column 5: *add* 1781·838. Column 6: *add* 305°·08. Column 7: *add* 2.

12. Column 12: *for* 73° 20′ *read* 73° 29′.

13. Column 6: *for sf read* 10° ±.

14. Column 10: *for* 81″·33 *read* 81″·03.

15. Column 12: *add* Identical with VI. 89.

17. Column 9: *dele* 1781·786. Column 10: *dele* 128″ ±. Column 11: *dele* est.

20. Column 12: *add* O Σ 73 (with close *comes*).

22. Column 12: *add* This is Σ 1752, close pair.

26. Column 6: *for* 98°·53 *read* 81°·47. Column 12: *add* "should be *nf* by diagram."

30. Column 12: *add* diameter of *Capella*, by two measures, 2″·86, 1780·682. *For* 61·23 *read* 61° 23′.

32. Column 12: *add* O Σ 413; close pair.

38. Column 3: *for* 64 *Draconis read* 65 *Draconis*. Column 12: *add* O Σ Σ 200.

39. Columns 5 and 9: *for* 1786·882 *read* 1781·882.

42. AC. The angle 74°·30 has been erased in the MSS. and 74°·07 substituted. The distance of AC is given as 197″·31 in the printed Catalogue, and in the MSS. these figures have been erased and 160″·70 substituted. Column 12: *add* "Has three stars following."

44. The angle in the printed Catalogue is 112°·52 and in the MSS. 112°·50; 31′ being altered with the pen to 30′. Cf. "English Mechanic," Sept. 21, 1883.

51. Burnham in his Sixth Catalogue identifies this with 1, not 2, *Serpentis*.

54. Unidentifiable. It is *not* III. 25.

57. Column 12: *add* S. 799.

60. Column 12: *dele* Triple. It may be V. 47.

63. "A third nearly in the same direction and a little more than twice the distance."

65. 15 *Monocerotis*.

66. Column 12: *add* diameter by mean of 5 measures: 1781·972: 1″·37.

67. Column 12: *add* Dawes 5; close pair.

68. Lal. 10165.

77. Column 12: *add* central measures.

89. Column 12: *add* P. xiii. 219, 220.

91. In the field with γ *Geminorum*, 3′ or 4′ north of it. Triple 20 ft.

93. Column 5: *for* 1873·633 *read* 1783·633.

96. Column 12: *add* Σ 464.

98. Column 12: *add* P. iv. 24, 25; O Σ Σ 45.

100. Column 12: *add* O Σ Σ 238.

1885MNRAS..45..316S

No.

105. Column 10: *for* 111″·48 *read* 101″·48.

112. The angle is given as 277°·4 in MSS. and printed Catalogue; should be diminished by 180°, and be 97°·4. 82°·60 is clearly wrong.

113. Column 10: *for* 205″·73 *read* 145″·73. Column 12: *for* Σ 394 *read* ΣC.P. 394; and *add* Sh. 131. This star is called ξ *Virginis* by Sh.

117. Burnham in his Tenth Catalogue identifies this with S. 663, there being an error of 16′ in the Decl. of ♅ h.

120. Column 8: *add* AB. Column 9: *add* 1783·622. Column 10: *add* 84″·15. Column 11: *add* 1. Column 12: *add* P. xix. 67.

145 New Double Stars.

8. Column 12: *add* Σ 2769.

26. This is 36 *Crateris.* The place is in error.

28. Column 12: *add* P. xiv. 212.

49. Column 12: *add* h 4256. A.C. 8 (close pair).

50. Column 12: *add* h 4321.

67. Column 12: *add* Σ 550.

70. Column 12: *add* Sh. 126.

74. Column 12: *add* h 947.

76. Column 12: *add* O Σ 14.

81. Burnham (*Memoirs,* R.A.S. xlviii. p. 289) identifies this with ν′ *Coronæ.*

85. Σ 2521.

86. O Σ 401.

89. Column 12: *add* Σ 2687, S. 753.

93. Column 12: *add* Σ 479.

94. O Σ 168 *rej.*

97. Column 12: *for* H. V. III. *read* H. V. iii.

101. According to Cincinnati Observations V. this is W. Mural Circle Z. 134, No. 133.

102. Measured in Cincinnati Observations VI.

117. Column 12: *add* h 5356.

130. Σ 2826.

134. Σ 2699 is near.

135. h 3151.

138. According to Burnham this is O. Arg. 20475, but in Cincinnati Observations vi. it is W. C. 8814.

143. Σ 1668.

1885, *March* 11.

1885MNRAS..45..316S

On the Value of the Long Inequality in the Motion of the Moon due to the Disturbing Action of the Planet Mars. By Edmund Neison.

In the *Monthly Notices* for November (vol. xlv. p. 1) there is a communication by M. Gogou on the difference between the values found by us for the coefficient of the long inequality in the motion of the Moon with the argument: the mean motion of the Moon plus twenty times the mean longitude of *Mars* minus twenty-four times the mean longitude of the Earth.

The difference between M. Gogou and myself may be briefly stated thus. Whilst we both agree that the true value of the coefficient of this term when found *in this way* is only a small fraction of a second of arc, whereas M. Gogou's computations lead to values amounting to less than one thousandths of a second of arc, mine lead to values nearly a thousand times greater—to almost as large a quantity as that found in a similar way by M. Delaunay for the coefficient of the term of similar character due to the action of *Venus*, and having the argument: eight times the mean longitude of *Venus* minus thirteen times the mean longitude of the Earth.

There is more attached to this difference, *as thus stated*, than is thought by M. Gogou, who assumes it to be immaterial, as may be seen by an examination of the origin of the similar discordance between the values obtained by Hansen and Delaunay for the coefficient of the *Venus* term already mentioned.

As M. Gogou's calculations have been carried out with so much care, skill, and elaborateness, I should have been disposed to look for the source of this remaining discordance in some unsuspected deficiencies in my own far less elaborate work. But an examination of his memoir indicated a more probable origin. It was this. In calculating the values of the coefficients denoted by B, I retained the terms depending on the fifth and seventh powers of the eccentricities of *Mars* and the Earth, but in his calculation M. Gogou has omitted to do this. This I pointed out in my Note in the *Monthly Notices* for March 1882 (p. 266), and it seemed to me to offer a most probable explanation of the difference between my revised results and those of M. Gogou. I say revised results, for I had already in the *Monthly Notices* for March 1878, or four years earlier, pointed out that the very large value given in my first communication, in November 1877, was far too great, as the ordinary methods of calculating the coefficients b^i which I had employed were not sufficiently accurate for this special term.

In his present communication, M. Gogou returns to the consideration of this point and calculates the effect of certain small subsidiary terms of the fifth order, which were included by me in my calculations, but were omitted by him from his own investigations. He shows that the omission of these terms fails to account for the existing discordance.